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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,688	01/11/2002	Kevin W. Haulk	9874.00	9700
26884	7590	11/09/2006	EXAMINER	
PAUL W. MARTIN NCR CORPORATION, LAW DEPT. 1700 S. PATTERSON BLVD. DAYTON, OH 45479-0001			NG, CHRISTINE Y	
			ART UNIT	PAPER NUMBER
			2616	

DATE MAILED: 11/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/044,688

Applicant(s)

HAULK ET AL.

Examiner

Christine Ng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 8-11, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,588,043 to Tiedemann Jr. et al in view of U.S. Patent No. 6,570,860 to Hamalainen et al, and in further view of U.S. Publication No. 2004/0165550 to Beach et al.

Referring to claim 1 and 8, Tiedemann Jr. et al disclose in Figure 3 a system comprising:

A mobile station (MS 100) for displaying information.

A plurality of communication base stations (CBSs) (base stations BSs in cells C1<sub>A</sub>-C1<sub>S</sub> and C2<sub>A</sub>-C2<sub>S</sub>) communicatively connected to a host computer (mobile switching center MSC 40). Refer to Column 8, lines 8-28.

A host computer (MSC 40) for initiating transmission of a find message (page) to the mobile station, said find message transmitted by a plurality of CBSs (BSs in cells C1<sub>A</sub>-C1<sub>S</sub> page MS 100) utilizing all of the timeslots of a frame (when MS 100 is not in slotted mode, paging can be transmitted in all time slots; Column 14, line 66 to Column 15, line 20), and logging which CBS or CBSs received a response (MS 100 sends a response to the page to a receiving BS) returned by the mobile station in response to

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the find message and logging the timeslot in which the response was received (each MS is assigned a slot identified by the slot cycle index for data transmission; Column 8, lines 8-13). Refer to Column 8, line 56 to Column 9, line 2; Column 12, lines 20-36; and Column 13, lines 5-19.

Tiedemann Jr. et al do not disclose determining a new CBS assignment and a new timeslot assignment for the mobile station, and transmitting an assign command to the mobile station utilizing the timeslot in which the response was received instructing the mobiles station to listen for messages on the new timeslot.

Hamalainen et al in Figure 1 a system comprising mobile stations MS, base stations BSS, and a mobile switching center MSC. Hamalainen et al further disclose in Figure 8 a handover process between two base stations when a mobile station moves from a BSS(old) to a BSS(new). The MSC determines a new base station assignment BSS(new) and a new timeslot assignment (new time-slot configuration) for the MS. The assign command (Handover Command) is then sent to the MS using the original timeslot from BSS(old) instructing the MS to listen for messages on the new timeslot from BSS(new). Refer to Column 7, line 38 to Column 8, line 16. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include determining a new CBS assignment and a new timeslot assignment for the mobile station, and transmitting an assign command to the mobile station utilizing the timeslot in which the response was received instructing the mobiles station to listen for messages on the new timeslot. One would be motivated to do so in order to assign a new base station and timeslot to a mobile station. Once a mobile station is located in a

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different cell, it is registered with a new different base station and is given a new time slot configuration for transmission and reception of data.

Tiedemann et al and Hamalainen et al do not disclose that the mobile station is an electronic shelf label (ESL).

Beach et al disclose that systems supporting data communication between a central computer and mobile units is also necessary in applications that support a high volume of data communications from multiple users, such as electronic self labels. Figure 6 discloses a large store with radio data communications using portable terminals or electronic shelf labels with wireless communication. Refer to Sections 0001-0003 and 0043. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the mobile station is an ESL. One would be motivated to do so in order to since electronic shelf labels, like mobile units, also process high data communications.

Referring to claims 2 and 9, Tiedemann et al disclose in Figure 1 wherein the host computer (MSC 40) updates an ESL data file (database 50) with the new CBS assignment (cell) and new timeslot assignment (mobile station slot cycle index) information. Database 50 contains information about mobile stations (identified by the ID column), including cell location and slot cycle index. Refer to Column 8, lines 8-28.

Referring to claims 3 and 10, Tiedemann Jr. et al do not specifically disclose in Figure 1 wherein the transmission of the find message was initiated as a result of the ESL not responding to a message, and the host computer is further operative to retransmit the message to the ESL utilizing the new CBS and the new timeslot.

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However, as shown in Figure 3, MS 100 moves from cell C1<sub>A</sub> to cell C2<sub>A</sub>. Initially, the base station in cell C1<sub>A</sub> transmits a message to MS 100; MS 100 does not reply since it has moved along dashed line 180 to C2<sub>A</sub>. Then, all base stations in cells C2<sub>A</sub>-C2<sub>S</sub> of coverage area C2<sub>A</sub> transmit the find message to locate the MS100; MS100 replies and the message can be transmitted to MS 100 using the new base station C2<sub>A</sub> and time slot information. Refer to Column 12, line 17 to Column 13, line 19.

Referring to claims 4 and 11, Tiedemann et al do not specifically disclose in Figure 1 wherein the host computer (MSC 40) includes an ESL manager and a CBS manger, wherein the ESL manager sends a command to a CBS manager software module instructing the CBS manager software module to transmit the find message. However, since MSC 40 contains a database 50 for storing mobile station cell location information, it must contain a means to manage the mobile station information and base station information. The MSC must also have the means to request a find message when it does not have the cell location information for a particular mobile station.

Referring to claim 15, Tiedemann et al disclose in Figure 3 a mobile station update method to allow for mobile station relocation in an establishment including an mobile station system utilizing frame divided into a plurality of timeslots, the method comprising the steps of:

(b) Transmitting a message to the mobile station by a host computer, said message transmitted by one of a plurality of communication base stations (CBSs) utilizing one of the timeslots of a frame, said CBS being the CBS that was assigned to the mobile station when the mobile station was in the first location in the establishment.

As shown in Figure 3, MS 100 is initially assigned to the base station of cell C1<sub>A</sub>, and communicates with the base station of cell C1<sub>A</sub> using its slot cycle index. Refer to Column 8, lines 8-13 and Column 12, lines 17-36.

(c) Waiting for a response to the message. Since MS 100 has moved along dashed line 180 from cell C1<sub>A</sub> 160 to cell C2<sub>A</sub> 190, MS 100 does not reply since it is not within coverage area C1<sub>A</sub>. Then, all base stations in cells C2<sub>A</sub>-C2<sub>S</sub> of coverage area C2<sub>A</sub> transmit the find message to locate the MS 100. Refer to Column 12, line 55 to Column 13, line 19.

(d) If no response is received by the host computer, transmitting a find message, said find message transmitted by all of the plurality of CBSs utilizing all of the time slots of a frame. Refer to the rejection of claims 1 and 8.

(e) Logging which CBS or CBSs received a response to the find message and logging the time slot in which the response to the find message was received. Refer to the rejection of claims 1 and 8.

(f) Determining a new CBS assignment and a new timeslot assignment for the ESL. Refer to the rejection of claims 1 and 8.

(g) Transmitting an assign command the ESL utilizing the timeslot in which the response was received instructing the ESL to listen for messages on the new timeslot. Refer to the rejection of claims 1 and 8.

Tiedemann et al do not disclose (a) relocating an ESL and items associated with ESL from a first location in a retail establishment to a second location in the retails establishment.

Beach et al disclose that systems supporting data communication between a central computer and mobile units is also necessary in applications that support a high volume of data communications from multiple users, such as electronic self labels. Figure 6 discloses a large store with radio data communications using portable terminals or electronic shelf labels with wireless communication. Refer to Sections 0001-0003 and 0043. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include (a) relocating an ESL and items associated with ESL from a first location in a retail establishment to a second location in the retail establishment. One would be motivated to do so electronic shelf labels operate similarly to mobile stations, and mobile stations move from cell to cell. Relocating an ESL and items associated with ESL from a first location to a second location allows for more flexibility.

Referring to claim 16, Tiedemann et al disclose in Figure 3 that the step of relocating the ESL removed from the ESL from within communication range of the currently assigned CBS (base station in cell C1<sub>A</sub>). MS 100 moves along dashed line 180 from coverage area C1<sub>A</sub> 160 to coverage area C2<sub>A</sub> 190. Refer to Column 12, lines 58-63.

3. Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,588,043 to Tiedemann Jr. et al in view of U.S. Patent No. 6,570,860 to Hamalainen et al in view of U.S. Publication No. 2004/0165550 to Beach et al in view of U.S. Patent 6,574,211 to Padovani et al, and in further view of U.S. Patent No. 6,188,913 to Fukugawa et al.



Tiedemann et al do not disclose that step (c) further comprises that if the response to the find message is received by more than one CBS, identifying which CBS received the response with the strongest signal strength.

Padovani et al disclose that several base stations send a paging message to a mobile station. Upon decoding the mobile station, and for each time slot until the data transmission is completed, the mobile station measures the C/I of the forward link signals from the base stations and selects the best base station based on a set of parameters. A connection is then established between the base station and the mobile station for data transmission. Refer to Column 4, lines 26-43 and Column 7, lines 18-58. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that step (c) further comprises that if the response to the find message is received by more than one CBS, identifying which CBS received the response with the strongest signal strength. One would be motivated to do so in order to associate the mobile station with the base station of highest signal strength.

Tiedemann et al also do not disclose that step (c) further comprises that if the response to the find message is received by more than one CBS, identifying which CBS currently has the least ESL assignments.

Fukugawa et al disclose that when several base stations are sufficiently close to a mobile station, the base station that is currently communicating with smallest number of mobile stations is chosen to execute communication with that mobile station. Refer to Column 21, line 39 to Column 22, line 13. Therefore, it would have been obvious to

one of ordinary skill in the art at the time the invention was made to include that step (c) further comprises that if the response to the find message is received by more than one CBS, identifying which CBS currently has the least ESL assignments. One would be motivated to do so in order distribute the load of mobile stations between several base stations so that any one base station is not overwhelmed.

4. Claims 6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,588,043 to Tiedemann Jr. et al in view of U.S. Patent No. 6,570,860 to Hamalainen et al in view of U.S. Publication No. 2004/0165550 to Beach et al in view of U.S. Patent 6,574,211 to Padovani et al, and in further view of U.S. Patent No. 6,188,913 to Fukugawa et al. Refer to the rejection of claims 5 and 12.

5. Claims 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,588,043 to Tiedemann Jr. et al in view of U.S. Patent No. 6,570,860 to Hamalainen et al in view of U.S. Publication No. 2004/0165550 to Beach et al in view of U.S. Patent 6,574,211 to Padovani et al, and in further view of U.S. Patent No. 6,188,913 to Fukugawa et al. Refer to the rejection of claims 5 and 12.

### ***Response to Arguments***

6. Applicant's arguments filed August 28, 2006 have been fully considered but they are not persuasive.

Referring to the argument of claims 1-4, 8-11, 15 and 16 (page 8, line 9 to page 13, line 6):

Tiedemann et al disclose in Column 14, line 66 to Column 15, line 20 that a mobile telephone may assume a slotted mode wherein the mobile station monitors the

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paging channel during specific time slots and the base station pages the mobile station during the time when the mobile station is monitoring the paging channel. When the mobile station is not in the slotted mode, it can receive a page in any time slot. Also, when the system is not in slotted mode, the base station does not need to page the mobile station during the time when the mobile station is monitoring the paging channel, so paging can be transmitted in all time slots.

Although Hamalainen et al do not disclose transmitting a find message and does not contemplate the case of movement of a communication device when communication was not occurring, Hamalainen et al disclose determining a new CBS assignment and a new timeslot assignment for the mobile station, and transmitting an assign command to the mobile station utilizing the timeslot in which the response was received instructing the mobiles station to listen for messages on the new timeslot. This is analogous and combinable with Tiedemann et al since both inventions deal with finding a mobile station and transmitting information to it. Once a base station finds a mobile station, it then assigns a new time slot to the mobile station for data communication.

Beach et al disclose that systems supporting data communication between a central computer and mobile units is also necessary in applications that support a high volume of data communications from multiple users, such as electronic self labels. Figure 6 discloses a large store with radio data communications using portable terminals or electronic shelf labels with wireless communication. Refer to Sections

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0001-0003 and 0043. The invention of Tiedemann et al and Hamalainen et al can be applied to an ESL since electronic shelf labels, like mobile units, also process high data communications.

***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

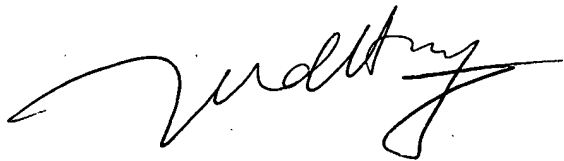
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

C. Ng   
October 31, 2006



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